

Amendments to the Claims:

The following listing of claims will replace all prior versions and listings of claims in the application:

Listing of Claims:

1. (Currently Amended) A controlled drug release electrode system comprising an electrode bearing a bi-layer coating, the bi-layer coating comprising a doped electroactive electro-active polymer layer on the electrode having an ionic exchangeable releasable dopant thereon and an effective conforming thickness of a water insoluble film forming a water-insoluble overlayer on the doped electro-active polymer layer, the doped electro-active polymer layer comprising an electro-active polymer doped with an ionic exchangeable releasable dopant and the overlayer being substantially impermeable to said dopant.
2. (Currently Amended) The electrode system of claim 1 wherein said ~~effective conforming thickness overlayer~~ is of a thickness sufficient to be substantially impermeable to said dopant.
3. (Currently Amended) The system of claim 1 wherein said ~~insoluble film forming~~ overlayer comprises a polymer.
4. (Currently Amended) The system of claim 3 wherein said polymer comprises poly(vinyl butyral), [[nafion]] sulfonated polytetrafluoroethylene, or poly(vinyl acetate).
5. (Original) The system of claim 4 wherein the poly(vinyl acetate) is at the most 88% hydrolyzed.
6. (Original) The system of claim 4 wherein the poly(vinyl acetate) is less than or equal to 40% hydrolyzed.
- 7-24. (Withdrawn)
25. (Currently Amended) An article of manufacture comprising a controlled drug release electrode system as set forth in claim 1 ~~comprising an electroactive polymer having an ionic exchangeable dopant thereon and additionally an effective conforming thickness of a water insoluble film forming overlayer substantially impermeable to said dopant.~~
26. (Currently Amended) The article of manufacture of claim 25 where said article of manufacture is placed in contact with a patient's skin.

27. (Original) The article of manufacture of claim 26 wherein an effective potential is applied to said electrode wherein said potential causes the release of said drug, making said drug effectively available to the patient.

28. (Currently Amended) The ~~method~~ article of manufacture of claim 25 wherein said ~~film forming overlay~~ overlayer comprises a polymer made from hydrophobic material which is crosslinked.

29. (Currently Amended) The ~~method~~ article of manufacture of claim 28 wherein said ~~electroactive~~ electro-active polymer comprises homopolymers and copolymers of polypyrrole, N-substituted pyrrole and C-substituted pyrrole.

30. (Currently Amended) The ~~method~~ article of manufacture of claim 29 wherein said ~~electroactive~~ electro-active polymer comprises polypyrrole.

31-43. (Withdrawn)

44. (Currently Amended) A dopant controlled release system comprising a bi-layer coating on an electrode, the bi-layer coating comprising (1) a layer of an electroactive electro-active polymer, the layer having a first surface in contact with the electrode and a second surface opposite the first surface, the electro-active polymer having an ionic exchangeable releasable dopant thereon, and (2) and an overlayer on the second surface that inhibits to lessen the spontaneous release of said dopant.

45. (Original) The system of claim 44 wherein the overlayer is made of a hydrophobic material.

46. (Original) The system of claim 45 wherein the overlayer is highly networked.

47. (Original) The system of claim 46 wherein the overlayer is highly networked due to crosslinking.

48. (Currently Amended) The system of claim 45 wherein the overlayer is chosen from the group consisting of poly(vinyl butyral), poly(vinyl acetate), and [[nafion]] sulfonated polytetrafluoroethylene.

49. (Original) The system of claim 48 wherein said electroactive polymer comprises homopolymers and copolymers of polypyrrole, N-substituted pyrrole and C-substituted pyrrole.

50. (Currently Amended) The system of claim 49 wherein said ~~electroactive~~ electro-active polymer comprises polypyrrole.

51. (Currently Amended) The [[method]] system of claim 45 wherein said dopant is a biologically active ingredient.

52. (Currently Amended) The [[method]] system of claim 51 wherein said biologically active ingredient is a pharmaceutical compound.

53. (Currently Amended) The [[method]] system of claim 52 wherein said pharmaceutical compound is selected from the group consisting of nutritional supplements, anti-inflammatory agents(e.g. NSAIDS such as s-ibuprofen, ketoprofen, fenoprofen, indomethacin, meclofentamate, mefenamic acid, naproxen, phenylbutazone, piroxicam, tolmetin, sulindac, and dimethyl sulfoxide), antipyretics, anesthetics including benzocaine, pramoxine, dibucaine, diclonine, lidocaine, mepiracaine, prilocaine, and tetracaine; demulcents; analgesics including opiate analgesics, non-opiate analgesics, non-narcotic analgesics including acetaminophen and astringent including calamine, zinc oxide, tannic acid, Hamamelis water, zinc sulfate; natural or synthetic steroids including triamcinolone, acetone, prednisone, beclomethasone dipropionate; asthmatic drugs including terbutaline sulfate, albuterol, leukotriene receptor antagonists; electrolytes, metals and minerals; antianxiety and antidepressant agents; antimicrobial and antiviral agents; antihistamines; immune-suppression agents; cholesterol-lowering agents; cardiac and high-blood pressure agents and mixtures thereof.

54. (Newly Presented) The electrode system of claim 1 wherein said overlayer is substantially free of the dopant.

55. (Newly Presented) The electrode system of claim 1 wherein said overlayer is substantially free of any dopant.

56. (Newly Presented) The electrode system of claim 25 wherein said overlayer is substantially free of the dopant.

57. (Newly Presented) The electrode system of claim 25 wherein said overlayer is substantially free of any dopant.

58. (Newly Presented) A coated substrate comprising a bi-layer coating on a substrate, the bi-layer comprising a doped electro-active polymer layer having a first surface in contact with the substrate and a second surface opposite the first surface, and water-insoluble overlayer on the second surface of the doped electro-active polymer layer, the doped electro-active polymer layer comprising an electro-active polymer doped with an ionic exchangeable releasable dopant and the overlayer being substantially impermeable to said dopant.